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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,563	10/02/2003	Jun Ye	213.003-US	9286

7590 04/19/2004

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EXAMINER

RAYMOND, EDWARD

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/677,563	Applicant(s) YE ET AL.	
	Examiner Edward Raymond	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10, 12-14, 17, 19, 20, 23-25, 27, 28, 34, 36, 38, 39, 45, 47 and 50 is/are rejected.
- 7) ☒ Claim(s) 6-9, 11, 15, 16, 18, 21, 22, 26, 29-33, 35, 37, 40-44, 46, 48 and 49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>(04) 1/20, 1/22, 1/26</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 3-5, 10, 12-14, 17, 19, 20, 23-25, 27, 28, 34, 36, 38, 45, 47, and 50** are rejected under 35 U.S.C. 102(e) as being anticipated by Avanzino et al. Avanzino et al. teach a sensor unit for sensing process parameters of a process to manufacture circuit using integrated circuit processing equipment, the sensor unit an integrated comprising: a substrate having a wafer-shaped profile (Claims 1, 17, and 34: see Figure 1: Wafer 110); a first sensor, disposed on or in the substrate, to sample a first process parameter (Claims 1, 17, and 34: see col. 5, lines 5-13); and a second sensor, disposed on or in the substrate, to sample a second process parameter wherein the second process parameter is different from the first process parameter (Claims 1, 17, and 34: see col. 6, lines 27-35).

Avanzino et al. teach a sensor unit further including communications circuitry disposed on the substrate (Claim 3: see Figure 14: LAN 1462), wherein the communications circuitry is coupled to the first and second sensors to provide data to an external device wherein the data is representative of the first and second process parameters (Claim 3: see Figure 14: Remote 1458).

Avanzino et al. teach a sensor unit further including a first source, disposed on or in the substrate, wherein first source generates an interrogation signal and wherein the first sensor uses the interrogation signal from the first source to sample the first process parameter (Claims 4, 13, 17, and 34: see col. 9, lines 18-41: The Examiner notes that the heat signature is referring to a temperature sensing unit).

Avanzino et al. teach a sensor unit further including a second source, disposed on or in the substrate, wherein second source generates an interrogation signal and wherein the second sensor uses the interrogation signal from the second source to sample the second process parameter (Claims 5, 13, and 45: see col. 9, lines 52-67: The Examiner notes that the second source generates an interrogation/analyzing signal to analyze pressure data).

Avanzino et al. teach a sensor unit wherein the first sensor operates in a real-time mode (Claims 10, 12, 19, 27, 36, and 38: see col. 5, lines 22-26).

Avanzino et al. teach a sensor unit wherein the first sensor is a temperature sensor and the second sensor is a chemical sensor (Claims 14 and 47: see col. 6, lines 22-31).

Avanzino et al. teach a sensor unit further including data storage to store data which is representative of the first parameter (Claims 20 and 28: see Figure 14: System Memory 1416).

Avanzino et al. teach a sensor unit wherein the first sensor is a CMOS devices (Claim 23: see col. 5, lines 3-11).

Avanzino et al. teach a sensor unit wherein the first parameter is the surface profile (Claims 24 and 50: see col. 3, lines 13-28).

Avanzino et al. teach a sensor unit wherein the sensor unit further includes a predetermined surface layer which is disposed above the source and the first sensor (Claim 25: see col. 7, line 62 through col. 8, line 17).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 2 and 39** is rejected under 35 U.S.C. 103(a) as being unpatentable over Avanzino et al. Avanzino et al. teach a data storage to store data sampled by the first sensors (Claim 39: see Figure 14: System Memory 1416); and communication circuitry, coupled to the data storage, to provide the data which is representative of the first

parameter to external circuitry (Claim 39: see Figure 14: LAN 1464). Avanzino et al. teach a sensor unit disposed in the wafer-shaped substrate, to provide electrical power to the first sensor. Avanzino et al. does not teach a rechargeable battery, per se. The Examiner notes that a battery is a power source (Claim 2: see col. 3, lines 37-40). It would have been obvious to the person ordinary skill in the art at the time the invention was made to modify Avanzino et al. to use a battery, because this would allow for the integrated circuit to be portable and/or mobile.

Allowable Subject Matter

6. **Claims 6-9, 11, 15, 16, 18, 21, 22, 26, 29, 30-33, 35, 37, 40-44, 46, 48, and 49** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Soderlund teaches a universal test circuit for integrated circuit packages. Foote et al. teach micromachined thermoelectric sensors and arrays and process for producing. Hierold teaches a thermal sensor/actuator in semiconductor material. Scheiter et al. teach a micromechanical sensor. Schaffer et al. teach a planar sensor for determining a chemical parameter of a sample.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Raymond whose telephone number is 571-272-

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2221. The examiner can normally be reached on Monday through alternating Friday between 8:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-2221 for regular communications and 571-272-1562 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

A handwritten signature in black ink, appearing to read "Edward Raymond". The signature is fluid and cursive, with the first name "Edward" and last name "Raymond" clearly distinguishable.

April 13, 2004
Edward Raymond
Patent Examiner
Art Unit 2857